

# **MODIS TECHNICAL TEAM MEETING**

**February 7, 1996**

The MODIS Technical Team Meeting was chaired by Vince Salomonson. Present were Bruce Guenther, Paul Chan, Barbara Putney, Harry Montgomery, David Herring, Steve Ungar, Ken Anderson, Barbara Conboy, Yoram Kaufman, and Wayne Esaias.

## **1.0 SCHEDULE OF EVENTS**

Feb. 20 - 21	MODLAND-SDST Workshop at GSFC
Feb. 27 - 28	MODIS SDST Science Advisory Panel at GSFC
March 18 - 19	EOS Test Site Meeting
March 20	MODIS Science Software Review at Valley Forge
March 22 - 23	SWAMP at Valley Forge
April 30	MCST-Science Team Precursor Meeting at GSFC
May 1 - 3	MODIS Science Team Meeting at GSFC
May 16 - 17	SWAMP Land Review

## **2.0 MINUTES OF THE MEETING**

Salomonson announced that, according to Carol Raymond, the dates for the New Millennium Program workshop at NASA JPL have slipped to the late March/early April 1996 timeframe. The final dates will be announced as soon as they are established.

### **2.1 MODIS Project Reports**

Anderson reported that SBRS is still searching for the cause and solution to the along track shift and resulting misalignment of the cooled bands on the MODIS Protoflight Model (PFM) following thermal and vibration tests. He said that there appears to be a misregistration between the aft optics platform and radiative cooler. SBRS agreed Friday to disassemble the PFM, glue the cooler into place, and then reassemble the instrument. Anderson believes that once the cooler is glued into place there will be no further shift in registration.

Anderson announced that SBRS found an electrical short in the radiative cooler, or perhaps in the test bench itself.

Anderson stated that, according to their latest schedule, SBRC will deliver the MODIS PFM before Christmas this year. He is concerned that, given the considerable work remaining for SBRS to complete, their expected delivery date is within a few weeks of the latest date that Lockheed-Martin will accept it. Thermal vacuum testing of the PFM will begin around Sept. 1.

Guenther pointed out that MCST is scheduled to release its Version 2 software in February 1997; therefore, its algorithms will be frozen by the end of October 1996. He said that he doesn't expect the MCST software to be fully mature until the Version 2.1 release, scheduled for the February 1998 timeframe. Guenther wants to be sure that MCST has had ample time to access and analyze all of the MODIS test data before it can characterize the instrument well enough to produce fully mature software.

## **2.2 MCST Reports**

Guenther showed a chart (Attachment 1) of model data based on some of SBRS's measurements of the MODIS PFM near infrared optics. According to SBRS's measurements, bands 1, 2, 17, 18, and 19 in the near infrared show a relatively large computed transmission for the aft optics with implications of possible early saturation in these bands for science signals. MCST will wait for system level measurements for verification of this characteristic and will decide then what to do about it.

Anderson agreed that previous SBRS estimates have always estimated MODIS's near infrared optics performance to be high within specifications, but now their measured data shows that performance for the five bands Guenther discussed are above specifications. SBRS is considering possible fixes for this problem, such as changing the bias voltage on the near infrared focal plane.

Guenther then showed a chart (Attachment 2) listing the emissive infrared bands and the expected uncertainties due to scan angle effects with and without spacecraft maneuvers. On all bands but one, the uncertainty of the product improves to about, or less than, the required uncertainty of 1 percent due to scan angle effects. He noted that the uncertainty shown due to scan angle effects only. Because of other uncertainties in the system, the actual uncertainty of the product will be larger than the uncertainties shown in this graph.

## **2.3 SDST Reports**

Putney reported that SDST is on schedule for its Feb. 22 delivery of beta software to the GSFC DAAC and expects a successful delivery.

Salomonson commended the recent efforts of SDST and MCST, and encouraged those support teams to continue to interact and cooperate in a seamless, uniform manner.

Salomonson told the Team that Steve Wharton, EOSDIS Project Scientist, took forward to Dale Harris, associate director of ESDIS, Putney's concerns that ECS is purchasing its hardware too soon. Harris responded that ECS is trying to get a snapshot of its hardware requirements in preparation for its upcoming Critical Design Review (CDR). He agreed that buying all of their hardware 1.5 years prior to launch is too early and does not plan to do it.

Putney will contact Wharton to share the ECS schedule and e-mail messages that seem to contradict Dale Harris's position. Wharton will get written clarification on this issue.

#### **2.4 GSFC DAAC Reports**

Chan reported that the IR-1 (InterRelease-1) DAAC hardware is now in place for the Feb. 22 beta delivery. The GSFC DAAC is ready to begin testing on that date.

Chan stated that the GSFC DAAC is working with some EOS principal investigators to produce customized data subsets and to conduct algorithm testing for development.

The GSFC DAAC is working with SDST to generate the MODIS metadata specifications.

#### **2.4 EOS Lacks Detailed Diurnal Cycle Data**

Kaufman relayed GOES Project Scientist Dennis Chesters's idea to the Team to add a more sophisticated geostationary satellite to the EOS program. Kaufman pointed out that currently the EOS Program has no plans for collecting diurnal cycle data at a high temporal resolution. Kaufman and Chesters would like to monitor long-range changes in some parameters. Kaufman stated that we cannot distinguish real changes in the diurnal cycle for a given area if we only take measurements every 3 or 4 days.

Salomonson agreed that an advanced geostationary satellite is a good idea. However, with funding constraints being what they are this is a matter that is beyond the EOS program and probably has to be considered at the Mission to Planet Earth level. Furthermore, an idea such as this needs to be considered in a joint programmatic environment with NOAA.

Guenther added that Chesters has also presented the idea of adding some calibration capabilities to the NASA Space Station. For example, an instrument could be built that would scan the moon coincident to when the GOES infrared sounders are scanning the moon. This could be a calibration transfer standard to other polar-orbiting and Earth-view sensors.

#### **2.5 OCTS Launch**

Esaias announced that the Japanese Ocean Color Thermal Scanner (OCTS) will be launched in August 1996. He said that access to OCTS data to test MODIS algorithms is important to the Ocean Discipline Group, as stated in the SIMBIOS Validation Plan. He plans to poll the other MODIS discipline groups to get a clear statement of how important OCTS data would be to them.

### **3.0 ACTION ITEMS**

#### **3.1 Action Items Carried Forward**

1. *SDST*: distill the questions and concerns about metadata into a list and prepare a strawman for resolving the concerns.

### **4.0 ATTACHMENTS**

**NOTE: All attachments referenced below are maintained in MODARCH and are available for distribution upon request. Please contact David Herring, MAST Technical Manager, at (301) 286-9515, Code 920, NASA/Goddard Space Flight Center, Greenbelt, MD 20771 if you desire copies of any attachments.**

1. ÒMeasured and Required Optical System Transmission,Ó by Bruce Guenther
2. ÒMODIS Thermal Bands Calibration Accuracy Improvement Resulting from a Spacecraft Maneuver to Enable Full Earth View Scan of Deep Space,Ó by Bruce Guenther